



## UNITED STATES PATENT AND TRADEMARK OFFICE

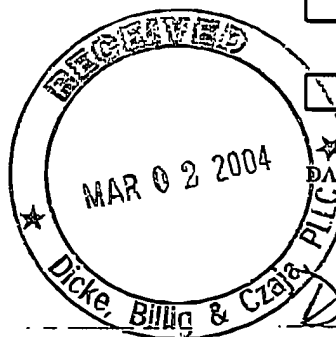
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/073,426	02/11/2002	Cory Watkins	1552-CA-1	3969

37974 7590 02/26/2004

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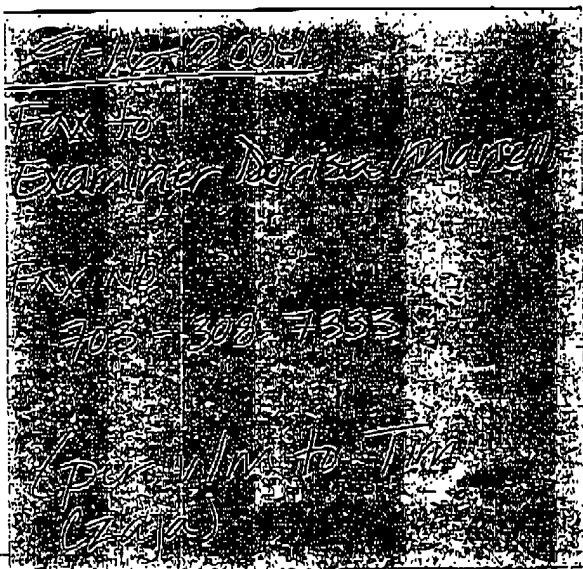
EXAMINER
PHAM, HOA Q
ART UNIT
PAPER NUMBER

2877

DATE MAILED: 02/26/2004

D:V 4/26/04; 5/26/04; +  
8/26/04

Please find below and/or attached an Office communication concerning this application or proceeding.



US ACTION \_\_\_\_\_  
DUE DATE 5-26-04  
Paper Dated \_\_\_\_\_  
OA ☒ Final ☒  
Msg. Pt. \_\_\_\_\_  
Appeal \_\_\_\_\_  
Other \_\_\_\_\_

**Office Action Summary**

Application No.

10/073,426

Applicant(s)

WATKINS ET AL.

Examiner

Hoa Q. Pham

Art Unit

2877

- The MAILING DATE of this communication appears on the cover sheet with the correspondence address -

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.135(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 10 November 2003.
- 2a) ☒ This action is **FINAL**.      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                                    | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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**DETAILED ACTION*****Drawings***

1. The proposed drawing filed on 11/10/03 has been approved.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2, 8-9, 16 and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Corle et al (5,067,805) in view of Doemens et al (5,991,040).

Regarding claims 1, 8, 16, and 20; Corle et al discloses a non-laser confocal scanning optical microscope in which the light source is a white light such as an arc-lamp (see column 1 lines 40 or column 3, lines 41-44). Corle et al does not explicitly teach that the confocal optical microscope can be used to inspect the projection on a substrate; however, such a feature is known in the art as taught by Doemens et al. Doemens et al teaches that the measurement system according to the confocal principle for inspecting the projections such as shape and height of the soldering bumps in ball grid arrays of a semiconductor substrate (figures 1, column 1, lines 14-25 and column 2, lines 47-52). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the basic device of Corle et al to inspect the

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projections of a semiconductor substrate as taught by Doemens et al if additional inspections are desired.

Regarding claims 2 and 9, Corle et al teaches that the detector is a CCD camera (column 1 line 55).

Regarding claim 21, Doemens et al teaches that the confocal principle method doesn't need a Nipkow disk.

4. Claims 3-7, 10-15, and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Corle et al and Doemens et al as applied to claims 1-2, 8-9, 16 and 20-21 above, and further in view of McCarthy et al (4,802,748).

Regarding claims 3-4, 7, 10-11, 14, and 17-18, Corle et al does not explicitly teach that the beam splitter is a pellicle beam splitter. However, such a feature is known in the art as taught by McCarthy et al. McCarthy et al, from the same field of endeavor, discloses a confocal scanning microscope in which the pellicle beam splitter is used (column 3, lines 43-45). It would have been obvious to one having ordinary skill in the art at the time the invention was made to replace the beam splitter of Corle et al by a pellicle beam splitter as taught by McCarthy et al because the pellicle beam splitter is extremely thin so as not to double the image or introduce astigmatism as suggested by McCarthy (column 3, lines 43-45).

Regarding claims 5, 6, 7, 12-14, and 18; Corle does not explicitly teach the use of plural lenses in the object imaging system and the camera system; however, such use of plural lenses in each of imaging system is known to one skilled in the art for the

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purpose of providing means for focusing and/or varying the magnification. Thus, it would have been obvious to one skilled in the art at the time the invention was made to utilize the system provided by Corle et al in an inspection system having objective system and camera system with plural lenses for the purpose of providing means for adjusting the focus and/or magnification of the whole inspection system.

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Svetkoff et al (6,177,998) discloses a method and system for high speed measuring of microscope targets.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

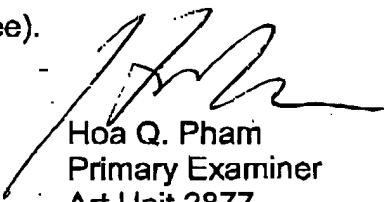
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoa Q. Pham whose telephone number is (571) 272-2426. The examiner can normally be reached on 6:30 7:30AM to 6 PM, Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Hoa Q. Pham  
Primary Examiner  
Art Unit 2877

HP  
February 5, 2004